

## ER Site No. 135: Bldg 906 Drain System

ADS: 1303

Operable Unit: Tech Area II

Site History .....	1
Constituents of Concern.....	3
Current Hazards .....	3
Current Status of Work .....	3
Future Work Planned .....	4
Waste Volume Estimated/Generated .....	4

Primary Contact: [Dick Fate](#)

Office Phone: 284-2568

### Site History

Building 906 was constructed in 1950 and was located in the central part of Technical Area-II (TA-II), about 125 feet west of Building 920. It was approximately 900 square feet and contained a fume hood sink and two floor drains, all of which are connected to a small drainfield. No toilet or septic tank was ever installed. The original system, on the west side of the building, consisted of a drywell that was connected to the laboratory drains. The newer leachfield, installed to replace the drywell, consisted of 4-in. perforated lines in two gravel-filled trenches; the trenches were approximately 2-ft by 2-ft by 20-ft long and cut through the original drywell. The drywell was used from 1950 to 1978, when the newer leachfield was installed to serve a shower installed in the north end of the building.

Little information regarding early operations at Building 906 and the types and amounts of hazardous materials that may have been used there is available. It is known that test materials returned from the Nevada Test Site were stored and cleaned in the building during the 1950s. These materials may have been contaminated with metals, including lead, zinc, and lithium, and radioactive constituents, including uranium, tritium, and fission products. High explosives (HE) compounds and hexafluorine also may have been stored in the building during this time. In the 1960s, paints and organic compounds, trichloroethylene, trichloroacetic acid, and acetone were stored there. Between 1978 and 1980, leaking transformers containing polychlorinated biphenyls (PCBs) may have been temporarily stored in the building. Herbicides also may have been used near the west side of the building. During the 1980s, the building was used as a chemical laboratory and for conducting electrical battery research and development. The building was decontaminated and demolished in 1999.

In order to determine that no potential threats exist to human health or the environment at this site, environmental testing was conducted. Testing included a passive soil vapor survey, geophysical survey, and soil sampling.

From November 11 to December 3, 1993, a passive soil vapor survey (SVS) investigation was conducted in the area surrounding Building 906. No volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCs) were identified from the SVS investigation in the vicinity of the Building 906 leachfield.

The area surrounding Building 906 was part of a geophysical Surface Towed Ordnance Locator System (STOLSTM) survey conducted in December 1993 and an electromagnetic (EM) survey conducted in December 1993. No anomalies related to buried material, other than underground utilities, were identified.

On March 7 and 8, 1994, a borehole (TA2BH01) was drilled west of Building 906, located in the area of the regional drywell and the center of the leachfield. The borehole was drilled to a total depth of 151 ft below grade. Soil samples were collected at depths of 3, 8, 14, 23, 30, 39, 52, 58, and 74.5 ft below grade. Analyses performed included: tritium for all samples; metals, HE compounds, radioisotopes, and total uranium for samples collected to a depth of 52 ft below grade; and VOCs and SVOCs for samples collected to a depth of 14 ft below grade.

Toluene was the only VOC detected, with concentrations of 6.2 parts per billion (ppb) (6.5 feet below grade) and 6.9 ppb (10.25 ft below grade). Fluoranthene and bis (2ethylhexyl) phthalate were the only SVOCs detected, fluoranthene at 370 (milligrams per kilogram) mg/kg (6 ft below grade) and bis (2ethylhexyl) phthalate at 530 mg/kg (11.6 ft below grade). Bis-(2ethylhexyl) phthalate is a common contaminant from latex gloves found as a result of sampling activities and is not usually considered an environmental contaminant. Additionally, bis-(2ethylhexyl) phthalate is not a constituent of concern at this site. No HE compounds were detected in any of the borehole soil samples.

Tritium results ranged from <210 pico curies per gram (pCi/g) to 340 pCi/g. A background tritium concentration has not been established for SNL/NM. However, results of a dose assessment using the RESRAD model indicate acceptable levels of tritium in soil based on DOE guidance. No other radioactive constituents were observed.

Comparison of analytical results to Resource Conservation and Recovery Act (RCRA) proposed Subpart S action levels shows that toluene and fluoranthene are both below the prescribed action levels of 20,000 mg/kg and 3000 mg/kg, respectively. The results of the surveys and soil sampling indicate that there was no significant release of hazardous constituents from this site which pose a threat to human health or the environment.

The regional aquifer in the vicinity of ER Site 135 is within the upper unit of the Santa Fe Group. The depth to the regional aquifer in the nearest monitor well to ER Site 135(TA2-NW1-595) is approximately 520 feet (ft) below ground surface (fbgs) or 4,889.3 ft above mean sea level (famsl). A shallow water-bearing zone also exists in the vicinity of ER Site 135. The depth to the shallow zone ranges from approximately 267 to 320 fbgs (5,081 to 4,889 famsl). Monitor wells TA2-SW1-325, TA2-NW1-320, WYO-2, TA2-W-19, and TA2-W-01 are located in the vicinity of ER Site 135 and are screened in the shallow water-bearing zone.

The area is essentially flat, with a gentle slope to the west of approximately 4 percent. Tijeras Arroyo, the largest drainage feature at SNL/NM, is located approximately one half mile from the site. The surface geology consists of unconsolidated alluvial and colluvial deposits derived from the Sandia and Manzanita Mountains. These deposits consist of sediments ranging from clay to gravel derived from the granitic rocks of the Sandia Mountains and greenstone, limestone, and quartzite derived from the Manzanita Mountains.

Surficial deposits are underlain by the upper unit of the Santa Fe Group. In this area, the piedmont-slope alluvium may be up to 100 ft thick, and the upper Santa Fe unit is approximately 1,200 ft thick.

The piedmont-slope alluvium, which was deposited by the ancestral Tijeras Arroyo, is generally coarse-grained sand and gravel. The upper Santa Fe unit was deposited from 5 to 1 million years ago and consists of coarse- to fine-grained fluvial deposits from the ancestral Rio Grande that intertongue with coarse-grained alluvial-fan/piedmont-veneer facies, which extend westward from the Sandia and Manzanita Mountains. ER Site 135 is near the easternmost limit of the ancestral Rio Grande deposits. Several rift-bounding faults are located east of ER Site 135. The nearest is the Sandia fault-zone, characterized by north-trending, west-dipping normal faults. The westernmost fault is located approximately 1.2 miles east of the site.

## **Constituents of Concern**

Lead  
Lithium  
Uranium  
Tritium  
Fission Products  
HE  
TCE  
TCA  
PCBs

## **Current Hazards**

There are no hazards at this site related to contamination of surface or subsurface soils.

## **Current Status of Work**

Investigations to date have included soil vapor surveys and soil sampling. ER Site 135 was proposed for NFA in August 1994.

## **Future Work Planned**

ER Site 135 was proposed for NFA in August 1994. Additional soil sampling was performed in FY 2000. An RSI data submittal with a revised risk assessment will be submitted to NMED. Any future investigations will be at the discretion of NMED.

## **Waste Volume Estimated/Generated**

None.

**Information for ER Site 135 was last updated Jan 24, 2003.**